



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,726	10/30/2003	Mircea Dusa	081468-0306588	6337

909 7590 02/24/2006

PILLSBURY WINTHROP SHAW PITTMAN, LLP
P.O. BOX 10500
MCLEAN, VA 22102

EXAMINER

PHAM, HOA Q

ART UNIT PAPER NUMBER

2877

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,726

Applicant(s)

DUSA ET AL.

Examiner

Hoa Q. Pham

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 9 and 11-16 is/are rejected.
- 7) ☒ Claim(s) 7, 10 and 17-19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/19/03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings filed on 10/30/03 have been accepted.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 8-9, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stirton (6,458,605) in view of Brill et al (US 2002/0072003A1).

Regarding claims 1, 12-13 and 16, Stirton (of record) discloses a method and apparatus for controlling photolithography overlay registration comprises a surface of a substrate (208) on which a test pattern comprising a combination of first and second pattern components (202, 204) is formed, the first pattern component being different from the second pattern component (column 6, lines 6-11); a first grating structure reference library (138) and a second grating structure reference library (139); means for measuring a reflection spectrum of the test pattern, a reflection of spectrum of the first

Art Unit: 2877

reference pattern and a reflection spectrum of the second reference pattern (column 7, lines 37-60); and deriving, from the reflection spectra, information indicative of at least one parameter (overlay error, trench width, line width...etc...) of the test pattern. Stirton teaches that the reference data is retrieved from libraries (138, 139) and does not teach that the first and second reference patterns are formed on the same substrate; however, such a feature is known in the art as taught by Brill et al. Brill et al teaches that the use of a reference measuring tool (16) and an optical measuring system (12), the reference data is determined at the same time as measured by the optical measuring system (see paragraph [0063]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention Stirton by determine reference data at the time of determining the test pattern as taught by Brill et al, thus an accuracy of the measurement is obtained.

Regarding claim 2, see figure 1 of Stirton for the use of a photolithography tool for printing the pattern on the substrate.

Regarding 3, see abstract of Stirton for determining overlay error.

Regarding claims 4 and 6, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the basic device of Stirton for determining the comatic aberration or asymmetry if additional measurement is desired.

Regarding claim 5, figure 2A of Stirton shows that the pattern components (202, 204) are different in form.

Regarding claim 8, see figure 2B of Stirton for the first pattern component (222) and second pattern component (224).

Regarding claim 9, see figure 2A of Stirton for first and second components (202, 204).

Regarding claim 11, see column 8, lines 1-63 of Stirton, for the relationship between the test pattern and first and second reference patterns.

Regarding claims 14-15, see column 4, lines 38-40 for the use of scatterometry tool (130).

Allowable Subject Matter

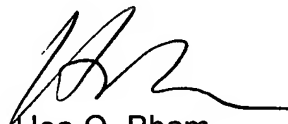
5. Claims 7, 10, 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Following references relates to overlay alignment metrology: Sezginer et al (US 2002/0158193 A1), Den Boef et al (US 204/0129900 A1 and US 2006/0033921 A1) and Japan reference (JP- 2004-287400).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoa Q. Pham
Primary Examiner
Art Unit 2877

HP
February 20, 2006